

ANALYTE DETECTION SYSTEM

Abstract Of The Disclosure

Disclosed herein is a system for estimating the concentration of an analyte in a material sample. The system comprises a source of electromagnetic radiation; a detector positioned to detect radiation emitted by the source, so that the source and the detector define an optical path therebetween; and a sample element configured to be positioned in the optical path. The sample element comprises a sample chamber at least partially defined by opposed first and second windows which are substantially transmissive of at least a portion of the radiation emitted by the source, and which define an optical pathlength through the sample element. The sample chamber has an internal volume of less than 2 microliters. When the material sample is positioned in the sample chamber and the sample chamber is positioned in the optical path, the system computes estimated concentrations of the analyte in the material sample. The estimated concentrations deviate from corresponding actual concentrations of the analyte in the material sample by an RMS error of less than 15 mg/dL.

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